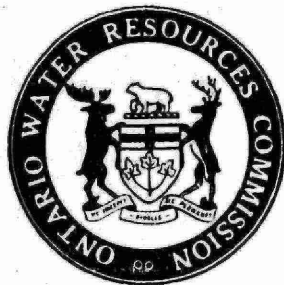


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**THE
ONTARIO WATER RESOURCES
COMMISSION**



A

Report On

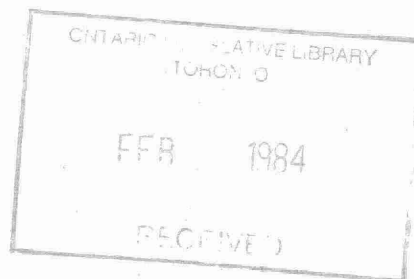
Acid Discharge

From

The Steel Company of Canada Limited

Hamilton

February 1969.



DIVISION OF INDUSTRIAL WASTES



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CARON
WR 550
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A

Report On

Acid Discharge

From

The Steel Company of Canada Limited

Hamilton

February 1969.

by

Division of Industrial Wastes

ONTARIO WATER RESOURCES COMMISSION

REPORT

Ontario Water Resources Commission

Municipality City of Hamilton Date of Inspection February 1969

Re: ACID DISCHARGE FROM THE STEEL COMPANY OF CANADA LIMITED ON FEBRUARY 13 - 15, 1969.

Field Inspection by Division of Industrial Wastes Report by Division of Industrial Wastes

SUMMARY

As a result of a question on the order paper of the House for February 25, 1969, the Ontario Water Resources Commission was informed that an acid discharge from the Steel Company of Canada Limited occurred on February 13, 1969.

The Company was contacted by telephone on February 25 and confirmed that an acid discharge had occurred, and their representatives explained the circumstances of the discharge orally. A written description of the incident was provided by the Company in letters dated February 26 and February 28. (see appendix I)

In view of the circumstances which necessitated the discharge of the acid, the method of discharge used, and the estimated effects on Burlington Bay, it is felt that the Company employed a practical method of disposal in this emergency. The Company could be criticized, however, in that the OWRC was not notified of the discharge, and the effluent to Burlington Bay was not monitored during the period of discharge. In this connection a letter dated February 26 (see appendix II) was sent to the Company requesting that all such abnormal discharges be reported immediately to the Commission. Since that time the Company has done so.

REASONS FOR THE DISCHARGE

The Company's first indication of trouble was noted on February 10 when severe corrosion conditions were detected in their acid regeneration plant. Investigation revealed that contaminated acid from the supplier had been added to the Company's acid system which included two acid pickling lines and the acid regeneration plant. The contaminated acid contained 1,000 parts per million of fluoride while the specification for the acid was not to exceed 1.7 parts per million.

By the time the problem was defined, the entire acid system containing 150,000 gallons of pickling solution was contaminated, and severe corrosion of the acid recovery plant was occurring. To prevent further damage which could have affected the acid recovery plant and possibly put it out of service for an extended period, the Company decided to dispose of the pickle liquor in a controlled manner.

METHOD OF DISCHARGE

The contaminated pickle liquor was discharged through the number 2 pickle line to the process sewers which passed through a lagoon before entering Burlington Bay. The material discharged was 150,000 gallons of pickle liquor containing 8 per cent hydrochloric acid, and was discharged over a three day period, February 13 to 15. The lagoon on the sewer system has a volume of approximately 5 million gallons, and the waste flow through the lagoon is approximately 170 million gallons per day. Thus the pickle liquor received a dilution of some 3000:1 before entering the bay. (The Company estimated a dilution of 2000:1.)

This emergency discharge situation was essentially the same as the normal disposal procedure used before the acid regeneration plant was installed.

APPENDIX I

The Steel Company of Canada Limited



GENERAL OFFICES, Hamilton, Ontario.

February 26, 1969

Ontario Water Resources
Commission
801 Bay St.
Toronto 5, Ontario

Attention: Mr. D. P. Caplice
Director

Dear Mr. Caplice:

As requested by the Industrial Waste Division of the O.W.R.C., the following is a report of an incident that caused approximately 150,000 gallons of spent hydrochloric acid to be discharged into Burlington Bay.

In early February, 1969, one or a number of hydrochloric acid tank truck shipments received at Hilton Works for our steel pickling operations contained fluoride concentrations of approximately 1000 ppm. This greatly exceeded our acid specifications which call for a maximum fluoride content of 1.7 ppm. The presence of this contaminator was not detected before the entire recirculated pickling solution of 150,000 gallons was contaminated. Once the detection was made, the decision was reached to dispose of the acid in the most acceptable and practical method. Since the regeneration process would not remove the contaminator and with no treatment facilities available, other than our lagoon system, the acid was disposed of in a manner still commonly used in many steel cleaning operations - i.e. gradual bleed off and dilution.

The effects of the contaminator on the Regeneration Plant were first observed on February 10, 1969, and the bleed off carried out on February 13, 14 and 15, 1969 through this Company's lagoon system. This allowed for a dilution factor of 2000:1 and ensured that the Commission's objectives with respect to pH and fluorides were not exceeded.

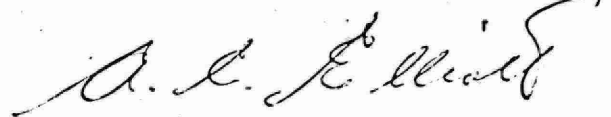
continued...

February 26, 1969

It should be noted that the spent acid discharged during this period did not exceed the daily averages of discharges prior to the start up of the regeneration plant and we are confident that this incident will not have any significant deleterious effects on Burlington Bay.

While we deplore the occurrence of this incident, we trust that the Commission appreciates that this is the first breakdown in our regeneration facilities since the start up in 1965. We have also taken the necessary precautionary measures to ensure that the recurrence of a similar incident is eliminated.

Yours truly,
THE STEEL COMPANY OF CANADA, LIMITED



A. C. Elliott
Superintendent
Utilities Department

ACE/mh

*copy to D. S. Caverly
D. Caplice
per file
ashworth*

The Steel Company of Canada, Limited

Hamilton, Ontario

February 28, 1969

OFFICE OF THE VICE-PRESIDENT

Mr. D. S. Caverly
General Manager
Ontario Water Resources Commission
135 St. Clair Avenue West
Toronto 7, Ontario

Dear Mr. Caverly:

It is obvious from your letter of February 26 that our report, prepared by Mr. A. C. Elliott, Superintendent of the Utilities Department, addressed to Mr. D. P. Caplice, Director of the O.W.R.C., has not reached your desk. I am attaching a copy of this report for your information.

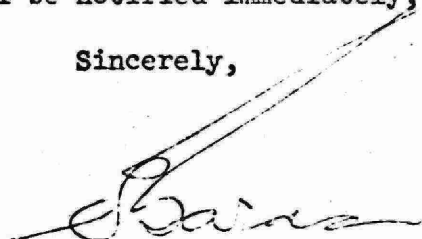
I would like, however, to point out that the discharge which left our No. 2 Pickle Line was not in fact 150,000 gallons of hydrochloric acid, but 150,000 gallons of pickle liquor containing about 8 % hydrochloric acid. You will ascertain from reading Mr. Elliott's report the reasons for our making the decision.

I would like also to draw your attention to Mr. Elliott's reference to the manner in which this pickle liquor was disposed of. You will note that the 150,000 gallons of pickle liquor was directed through our acid sewers to our lagoon system in the same manner in which we have disposed of waste pickle liquor for some years. These disposals have met the Commission's objectives in the past and, in fact, met the Commission's objectives on this occasion.

With the conversion of our No. 2 Pickle Line for the use of hydrochloric rather than sulphuric acid, we have been able to regenerate the effluent rather than pass it through our lagoon system, and thus materially reducing the flow to the lagoon and ultimately to the Bay.

Like yourselves, we very much regret the circumstances that caused this decision to be made and hope that future decisions of this nature will not be necessary. If in the future breakdowns occur that require action of this type to be taken, your Department will be notified immediately,

Sincerely,



J. P. GORDON
Vice President
Operating Division

RECEIVED
R. P. GORDON
MARCH 10 1969

JPG/mb

Att:

A P P E N D I X I I

135 St. Clair Avenue West,
Toronto 7, Ontario.
February 26, 1969.

REGISTERED MAIL

Mr. A. D. Fisher,
Vice-President,
Planning, Research
and Engineering,
The Steel Company
of Canada, Limited,
HAMILTON, Ontario.

Dear Mr. Fisher:

On February 25, 1969, the Commission received a report stating that The Steel Company of Canada, Limited discharged 150,000 gallons of hydrochloric acid to Burlington Bay. This was later confirmed by a representative of the Company with the additional information that the liquid had been directed into the East Side Lagoon.

Spillages of this nature are occurring all too frequently throughout the Province and, moreover, in many cases are not being reported to the Commission by management of the firms concerned. It is often only through the action of concerned employees or private citizens that we even learn that actions of this type were taken. Such occurrences, whether accidental or otherwise, must be reported to the Commission without delay and we will expect that, in the future, The Steel


Mr. A. D. Fisher

- 2 -

February 26, 1969

Company of Canada, Limited will follow this procedure. We will also expect a written report from the Company outlining the details of the recent loss or discharge of acid to Hamilton Bay.

Yours very truly,



D. S. Caverly,
General Manager.

cc: Mr. A. C. Elliott,
Superintendent,
Utilities Department,
The Steel Company
of Canada, Limited,
Hamilton, Ontario.

Mr. K. H. Sharpe
Mr. D. P. Caplice
Mr. H. A. Clarke
Mr. F. R. Phoenix
Mr. R. C. Stewart
Mr. J. D. Luyt



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